

In re Patent Application of:

**HERMANSON**

Serial No. **10/021,283**

Filing Date: **12/12/01**

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**In the Claims:**

1. (CURRENTLY AMENDED) A method of scaling images continuously on a display comprising the steps of:

displaying video data generated as a video data stream on a video display at a predetermined aspect ratio;

during playback or in a pause mode, obtaining video source values of pixel width and pixel height to be displayed;

determining the smallest integer increment on the ~~x~~/y axis video source values of pixel width and pixel height that will maintain the desired aspect ratio by using a greatest common denominator to reduce the ratio to the lowest integer, wherein if the area of video source data does not correspond one-to-one with the area of the destination region, scaling the video source data by calculating a new width and height as in current pixel width and height and width and height increments to be displayed and fixing an x and y position as fixed x and y center points minus or plus any respective new width and height divided by two, such as to allow an increase or decrease in the zoom level in a continuous fashion.

2. (ORIGINAL) A method according to Claim 1, and further comprising the step of generating a video data stream from an optical disc player.

3. (ORIGINAL) A method according to Claim 1, and further comprising the step of generating a video data stream as a High Definition Television (HDTV) signal.

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4. (ORIGINAL) A method according to Claim 1, and further comprising the step of manipulating a joystick for initiating a zoom function to scale images of the video display.

5. (ORIGINAL) A method according to Claim 4, and further comprising the step of moving the joystick up to increase zoom magnification by a predetermined number of pixels and moving the joystick down to decrease zoom magnification by a predetermined number of pixels until fully zoomed out.

6. (ORIGINAL) A method according to Claim 5, and further comprising the step of manipulating a second joystick to vary the x/y position of the zoomed region in a continuous fashion.

7. (ORIGINAL) A method according to Claim 1, and further comprising the step of displaying the video data on a video display that is operatively connected to a video game box containing an optical disc player, a central processing unit, a graphics processor unit, and game port.

8. (ORIGINAL) A method according to Claim 1, and further comprising the step of processing the video data such that a zoomed rectangle retains its perspective in relation to the video source values to minimize jitter/"bob" effects.

9. (ORIGINAL) A method according to Claim 1, wherein if zooming out an image on the video display, if a current

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pixel width and height and width and height increment to be added are less than the maximum width and height that can be displayed, then calculating a new width and height as the current pixel width and height and width and height increment to be displayed and fixing an x and y position as fixed x and y center points minus any respective new width and height divided by two.

10. (ORIGINAL) A method according to Claim 1, wherein if zooming in an image on the video display, if a current pixel width and height and width and height increment to be added are greater than the minimum width and height that can be displayed, then calculating a new width and height as the current pixel width and height and width and height increment to be displayed and fixing an x and y position as fixed x and y center points minus any respective new width and height divided by two.

11. (CURRENTLY AMENDED) A method of scaling images continuously on a display comprising the steps of:

displaying video data generated as a video data stream on a video display at a predetermined aspect ratio;

during playback or in a pause mode, obtaining video x,y source values of pixel width and pixel height to be displayed;

designating a destination region on the display for displaying the video source values to be displayed;

determining the smallest integer increment on the ~~x/y~~ axis video source values of pixel width and pixel height that will maintain the desired aspect ratio by using a greatest

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common denominator to reduce the ratio to the lowest integer;  
and

if the area of video source data does not correspond one-to-one with the area of the destination region, scaling the video source data in a graphics processor unit by calculating a new width and height as in current pixel width and height and width and height increments to be displayed and fixing an x and y position as fixed x and y center points minus or plus any respective new width and height divided by two, such as to allow an increase or decrease in a zoom level in a continuous fashion.

12. (ORIGINAL) A method according to Claim 11, and further comprising the step of generating a video data stream from an optical disc player.

13. (ORIGINAL) A method according to Claim 11, and further comprising the step of generating a video data stream as a High Definition Television (HDTV) signal.

14. (ORIGINAL) A method according to Claim 11, and further comprising the step of manipulating a joystick for initiating a zoom function to scale images of the video display.

15. (ORIGINAL) A method according to Claim 14, and further comprising the step of moving the joystick up to increase zoom magnification by a predetermined number of pixels and moving the joystick down to decrease zoom

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magnification by a predetermined number of pixels until fully zoomed out.

16. (ORIGINAL) A method according to Claim 15, and further comprising the step of manipulating a second joystick to vary the x/y position of the zoomed region in a continuous fashion.

17. (ORIGINAL) A method according to Claim 11, and further comprising the step of displaying the video data on a video display that is operatively connected to a video game box containing an optical disc player, a central processing unit, a graphics processor unit, and game port.

18. (ORIGINAL) A method according to Claim 11, and further comprising the step of processing the video data such that a zoomed rectangle retains its perspective in relation to the video source values to minimize jitter/"bob" effects.

19. (ORIGINAL) A method according to Claim 11, wherein if zooming out an image on the video display, if a current pixel width and height and width and height increment to be added are less than the maximum width and height that can be displayed, then calculating a new width and height as the current pixel width and height and width and height increment to be displayed and fixing an x and y position as fixed x and y center points minus any respective new width and height divided by two.

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20. (ORIGINAL) A method according to Claim 11, wherein if zooming in an image on the video display, if a current pixel width and height and width and height increment to be added are greater than the minimum width and height that can be displayed, then calculating a new width and height as the current pixel width and height and width and height increment to be displayed and fixing an x and y position as fixed x and y center points minus any respective new width and height divided by two.

21. (CURRENTLY AMENDED) A method of operating a video game comprising the steps of:

processing a video data stream as generated from an optical disc player and displaying video data on a video display at a predetermined aspect ratio;

manipulating a game controller for continuously scaling images on the video display by

obtaining video source values of pixel width and height to be displayed and determining the smallest integer increment on the ~~x/y axis~~ video source values of pixel width and pixel height that will maintain the desired aspect ratio by using a greatest common denominator to reduce the ratio to the lowest integer in response to a predetermined manipulation of the game controller, wherein if the area of video source data does not correspond one-to-one with the area of the destination region, scaling the video source data by calculating a new width and height as in current pixel width and height and width and height increments to be displayed and fixing an x and y position as fixed x and y center points minus or plus any respective new width and height divided by two, such as to

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allow an increase or decrease in the zoom level in a continuous fashion.

22. (ORIGINAL) A method according to Claim 21, and further comprising the step of manipulating the game controller by manipulating a joystick.

23. (ORIGINAL) A method according to Claim 22, and further comprising the step of moving the joystick up to increase zoom magnification by a predetermined number of pixels and moving the joystick down to decrease zoom magnification by a predetermined number of pixels until fully zoomed out.

24. (ORIGINAL) A method according to Claim 22, and further comprising the step of manipulating a second joystick to vary the x/y position of the zoomed region in a continuous fashion.

25. (ORIGINAL) A method according to Claim 21, and further comprising the step of displaying the video data on a video display that is operatively connected to a video game box containing the optical disc player, a central processing unit, a graphics processor unit, and game port.

26. (ORIGINAL) A method according to Claim 21, and further comprising the step of processing the video data such that a zoomed rectangle retains its perspective in relation to the video source values to minimize jitter/"bob" effects.

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27. (ORIGINAL) A method according to Claim 21, wherein if zooming out an image on the video display, if a current pixel width and height and width and height increment to be added are less than the maximum width and height that can be displayed, then calculating a new width and height as the current pixel width and height and width and height increment to be displayed and fixing an x and y position as fixed x and y center points minus any respective new width and height divided by two.

28. (ORIGINAL) A method according to Claim 21, wherein if zooming in an image on the video display, if a current pixel width and height and width and height increment to be added are greater than the minimum width and height that can be displayed, then calculating a new width and height as the current pixel width and height and width and height increment to be displayed and fixing an x and y position as fixed x and y center points minus any respective new width and height divided by two.

29. (CURRENTLY AMENDED) A method of operating a video game comprising the steps of:

processing a video data stream as generated from a DVD (digital versatile/video disc) player apparatus and displaying video data on a video display at a predetermined aspect ratio;

manipulating a game controller for continuously scaling images on the video display by the steps of obtaining video x,y source values of pixel width and height to be displayed;



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designating a destination region on the video display for displaying the video source values to be displayed;

determining the smallest integer increment on the ~~x/y~~ axis video source values of pixel width and pixel height that will maintain the desired aspect ratio by using a greatest common denominator to reduce the ratio to the lowest integer; and

if the area of video source data does not correspond one-to-one with the area of the destination region, scaling the video source data in a graphics processor unit by calculating a new width and height as in current pixel width and height and width and height increments to be displayed and fixing an x and y position as fixed x and y center points minus or plus any respective new width and height divided by two, such as to allow an increase or decrease in a zoom level in a continuous fashion.

30. (ORIGINAL) A method according to Claim 29, and further comprising the step of manipulating the game controller by manipulating a joystick.

31. (ORIGINAL) A method according to Claim 30, and further comprising the step of moving the joystick up to increase zoom magnification by a predetermined number of pixels and moving the joystick down to decrease zoom magnification by a predetermined number of pixels until fully zoomed out.

32. (ORIGINAL) A method according to Claim 30, and further comprising the step of manipulating a second joystick

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to vary the x/y position of the zoomed region in a continuous fashion.

33. (ORIGINAL) A method according to Claim 29, and further comprising the step of displaying the video data on a video display that is operatively connected to a video game box containing the DVD player, a central processing unit, a graphics processor unit, and game port.

34. (ORIGINAL) A method according to Claim 29, and further comprising the step of processing the video data such a zoomed rectangle retains its perspective in relation to the entire source to minimize jitter/"bob" effects.

35. (ORIGINAL) A method according to Claim 29, wherein if zooming out an image on the video display, if a current pixel width and height and width and height increment to be added are less than the maximum width and height that can be displayed, then calculating a new width and height as the current pixel width and height and width and height increment to be displayed and fixing an x and y position as fixed x and y center points minus any respective new width and height divided by two.

36. (ORIGINAL) A method according to Claim 29, wherein if zooming in an image on the video display, if a current pixel width and height and width and height increment to be added are greater than the minimum width and height that can be displayed, then calculating a new width and height as the current pixel width and height and width and height increment

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to be displayed and fixing an x and y position as fixed x and y center points minus any respective new width and height divided by two.

37. (CURRENTLY AMENDED) A video display system comprising:

a central processing unit and associated graphics processor unit for processing a video data stream and generating video data to be displayed;

a video display for receiving video data and displaying a video image at a predetermined aspect ratio;

a user manipulable controller operative with said graphics processor unit for scaling images on the video display by obtaining video source values of pixel width and height to be displayed and determining the smallest integer increment on the ~~x/y axis~~ video source values of pixel width and pixel height that will maintain the desired aspect ratio using a greatest common denominator to reduce the ratio to the lowest integer, and wherein if the area of video source data does not correspond one-to-one with the area of the destination region, scaling the video source data by calculating a new width and height as in current pixel width and height and width and height increments to be displayed and fixing an x and y position as fixed x and y center points minus or plus any respective new width and height divided by two, such as to allow an increase or decrease in the zoom level in a continuous fashion.

38. (ORIGINAL) A video display system according to Claim 37, wherein said video display comprises a television.

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39. (ORIGINAL) A video display system according to Claim 37, and further comprising an optical disc reader, including a DVD (digital versatile/video disc) player, for producing said video data stream.

40. (ORIGINAL) A video display system according to Claim 37, wherein said video data stream comprises a high definition television (HDTV) signal.

41. (ORIGINAL) A video display system according to Claim 37, wherein said user manipulable controller comprises a joystick.

42. (CURRENTLY AMENDED) A video display system comprising:

a central processing unit and associated graphics processor unit for processing a video data stream and generating video data to be displayed;

a video display for receiving video data and displaying a video image at a predetermined aspect ratio;

a user manipulable controller operative with said graphics processor unit for scaling images on the video display by obtaining video x,y source values of pixel width and height to be displayed;

designating a destination region on the display for displaying the video source values to be displayed;

determining the smallest integer increment on the ~~x/y~~ axis video source values of pixel width and pixel height that will maintain the desired aspect ratio by using a greatest

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common denominator to reduce the ratio to the lowest integer;  
and

if the area of video source data does not correspond one-to-one with the area of the destination region, scaling the video source data in a graphics processor unit by calculating a new width and height as in current pixel width and height and width and height increments to be displayed and fixing an x and y position as fixed x and y center points minus or plus any respective new width and height divided by two, such as to allow an increase or decrease in a zoom level in a continuous fashion.

43. (ORIGINAL) A video display system according to Claim 42, wherein said video display comprises a television.

44. (ORIGINAL) A video display system according to Claim 42, and further comprising an optical disc reader, including a DVD (digital versatile/video disc) player, for producing said video data stream.

45. (ORIGINAL) A video display system according to Claim 42, wherein said video data stream comprises a high definition television (HDTV) signal.

46. (ORIGINAL) A video display system according to Claim 42, wherein said user manipulable controller comprises a joystick.